

Application No. 10/552,841
Reply to Office Action dated 07/14/2010

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AMENDMENTS TO THE CLAIMS:

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This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Previously Presented) A lancing apparatus for moving a lancing element in a lancing direction from a wait position to a lancing position to lance an intended portion with the lancing element, the lancing apparatus comprising:

a first member which is reciprocally movable in the lancing direction and in a retreating direction which is opposite from the lancing direction;

a second member which moves along with the lancing element and performs reciprocal movement in the lancing direction and the retreating direction in accordance with the movement of the first member; and

movement conversion means for converting the reciprocal movement of the first member into the reciprocal movement of the second member in a manner such that a directional change of movement of the second member from the lancing direction to the retreating direction is performed during a one-way stroke of the first member in one of the lancing direction and the retreating direction;

wherein the first member is reciprocally movable between a first fixed position and a second fixed position;

wherein the second member performs one cycle of reciprocal movement between a third fixed position and a fourth fixed position during one cycle of reciprocal movement of the first member between the first fixed position and the second fixed position.

2. (Previously Presented) The lancing apparatus according to claim 1, wherein the second member performs turning-back movement while the first member moves straight between the first fixed position and the second fixed position.

3. (Previously Presented) The lancing apparatus according to claim 2, wherein the lancing element is positioned at the lancing position when the second member is positioned at the third

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fixed position, and the lancing element is positioned at the wait position when the second member is positioned at an intermediate region between the third fixed position and the fourth fixed position.

4. (Previously Presented) The lancing apparatus according to claim 1, wherein the lancing element moves from the wait position to the lancing position when the first member moves in the retreating direction.

5. (Previously Presented) The lancing apparatus according to claim 1, wherein when the first member performs one cycle of reciprocal movement, the second member performs one cycle of reciprocal movement which is phase-shifted substantially by 90 degrees from the first member.

6. (Previously Presented) The lancing apparatus according to claim 1; the movement conversion means comprises a third member for connecting the first member and the second member to each other and converting movement of the first member into reciprocal movement of the second member.

7. (Original) The lancing apparatus according to claim 6, wherein the third member includes a rotation shaft whose position is fixed, a first movable portion which engages the first member and is rotatable around the rotation shaft, and a second movable portion which engages the second member and is rotatable around the rotation shaft.

8. (Original) The lancing apparatus according to claim 7, wherein the first member includes a first engagement portion for allowing the rotation of the first movable portion; and wherein the second member includes a second engagement portion for allowing the rotation of the second movable portion.

9. (Previously Presented) The lancing apparatus according to claim 8, wherein at least one of the first and the second engagement portions includes an inclined portion which is inclined

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with respect to a transverse direction extending perpendicularly to the lancing and the retreating directions.

10. (Previously Presented) The lancing apparatus according to claim 9, wherein the inclined portion has opposite ends each of which is connected to a straight portion extending in the transverse direction.

11. (Original) The lancing apparatus according to claim 10, wherein, of the first and the second movable portions, the movable portion which engages the inclined portion moves through the inclined portion when the lancing element moves from the wait position to the lancing position and moves through the straight portion when the lancing element moves from the lancing position in the retreating direction.

12a. (Previously Presented) The lancing apparatus according to claim 9, wherein the inclined portion is provided in one of the first and the second engagement portions, whereas the other of the first and the second engagement portions extends substantially in the transverse direction.

13. (Original) The lancing apparatus according to claim 1, wherein the first member is fixed while being biased when the lancing element is positioned at the wait position, and the first member is moved by the biasing force when released from the fixed state.

14. (Original) The lancing apparatus according to claim 6, wherein the third member is pivotable to convert the movement of the first member into the reciprocal movement of the second member by the pivotal movement.

15. (Original) The lancing apparatus according to claim 14, wherein the third member includes a pivot shaft, a first movable portion which engages the first member and is pivotable around the pivot shaft, and a second movable portion which engages the second member and is pivotable around the pivot shaft.

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16. (Original) The lancing apparatus according to claim 15, wherein the first member includes an engagement portion for engaging the first movable portion and controlling movement of the third member in accordance with a position where the first movable portion engages.

17. (Original) The lancing apparatus according to claim 16, wherein the engagement portion includes an inclined portion for pivoting the third member to move the second member in the lancing direction.

18. (Original) The lancing apparatus according to claim 17, wherein the engagement portion includes an additional inclined portion for pivoting the third member to move the second member in the retreating direction.

19. (Original) The lancing apparatus according to claim 16, wherein the engagement portion includes a straight portion extending in the lancing and the retreating directions for moving the first member in the lancing direction or the retreating direction without moving the second and the third members in the lancing and the retreating directions.

20. (Original) The lancing apparatus according to claim 17, further comprising a resilient member for moving the second member in the retreating direction after the intended portion is lanced with the lancing element.

21. (Original) The lancing apparatus according to claim 16, wherein the first movable portion includes a first and a second pins; and

wherein the engagement portion includes an inclined portion with which the first pin engages in moving the second member in the lancing direction and with which the second pin engages in moving the second member in the retreating direction.

22. (Original) The lancing apparatus according to claim 21, wherein the first member includes an additional engagement portion with which the second pin selectively engages when the first member moves in the retreating direction.

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23. (Original) The lancing apparatus according to claim 22, wherein the first pin is larger in diameter than the second pin, and;

wherein the additional engagement portion has a width which is smaller than diameters of the engagement portion and the first pin.

24. (Original) The lancing apparatus according to claim 14, wherein the first member is movable in a crossing direction crossing the lancing and the retreating directions to pivot the third member to move the second member in the retreating direction.

25. (Original) The lancing apparatus according to claim 24, further comprising an actuating member for moving the first member;

wherein each of the first member and the actuating member includes an inclined surface, and the first member moves in the crossing direction by moving the inclined surface of the actuating member along the inclined surface of the first member.

26. (Original) The lancing apparatus according to claim 25, further comprising a guide which moves along with the first member in the lancing direction or the retreating direction, and a resilient member for connecting the guide and the first member to each other and biasing the first member in the crossing direction crossing the lancing and the retreating directions.

27. (Currently Amended) A lancing apparatus for moving a lancing element in a lancing direction from a wait position to a lancing position to lance an intended portion with the lancing element, the lancing apparatus comprising:

a first member which is reciprocally movable in the lancing direction and in a retreating direction which is opposite from the lancing direction;

a second member which moves along with the lancing element and performs reciprocal movement in the lancing direction and the retreating direction in accordance with the movement of the first member; and

a movement conversion mechanism for converting the reciprocal movement of the first member into the reciprocal movement of the second member, the movement conversion

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mechanism including a fixed stationary pin held at a fixed position, a first link arm connected to the first member and to the fixed stationary pin for pivoting about the stationary fixed pin, and a second link arm connected to the first link arm at a fixed angle and to the second member for pivoting about the stationary pin, [(the)] an angle being formed between the first and second link arms in a pivoting direction of the first and second link arms about the stationary pin being invariable regardless of positions of the first and second members, the second link arm being pivotable about the fixed pin as the first link arm pivots about the fixed pin.

28. (New) A lancing apparatus for moving a lancing element in a lancing direction from a wait position to a lancing position to lance an intended portion with the lancing element, the lancing apparatus comprising:

a first member reciprocally movable in the lancing direction and in a retreating direction opposite from the lancing direction;

a second member moving along with the lancing element and performing reciprocal movement in the lancing direction and the retreating direction in accordance with the movement of the first member; and

a movement conversion mechanism for converting the reciprocal movement of the first member into the reciprocal movement of the second member, the movement conversion mechanism including a stationary pin held at a fixed position, and a link member supported on the stationary pin for pivoting about the stationary pin,

wherein the link member includes a first arm carrying a first moveable pin connected to the first member, and a second arm carrying a second moveable pin connected to the second member, the first arm being connected to the second arm at an angle that is defined as an angle between the first and the second arms in a pivoting direction of the link member about the stationary pin, said angle being invariable regardless of positions of the first and second members.